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ABSTRACT

The fact sheet provides basic information about Hib Disease in young children, which may involve a bacterial meningitis causing mental retardation, hearing loss, partial blindness, speech disorders, partial paralysis, behavioral problems, or seizures. Stressed is prevention of Hib Disease through immunization. The question and answer format provides information on: What is Hib Disease? Why is the Association for Retarded Citizens concerned about Hib Disease? Who is most susceptible to Hib? How serious is bacterial meningitis? How is Hib treated? How can Hib Disease be prevented? How many children can now be protected from Hib Disease? (DB)

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arc facts

Association for Retarded Citizens

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FACTS ABOUT HIB DISEASE

What is Hib Disease?

Hib, which stands for *Haemophilus influenzae* type b, is not a disease itself, but instead is the name of a bacterial microorganism that causes several serious, often life-threatening illnesses, one of which—bacterial meningitis—may cause mental retardation in young children. Hib infection is the most common cause of bacterial meningitis, an inflammation of the membranes protecting the brain and spinal cord. The same Hib bacteria also can cause: pneumonia; an infectious arthritis called septic arthritis; epiglottitis, which is inflammation of the trachea or "windpipe"; otitis media, or middle ear infection; cellulitis, a skin inflammation; and a dangerous heart disease, pericarditis.

Although the word "influenzae" is part of the scientific name, Hib is not related to the virus that causes the respiratory infections generally called "flu."

Why is the ARC Concerned About Hib Disease?

Children who have been born healthy may acquire mental retardation in their early years if they become sick with bacterial meningitis caused by Hib disease. Until December 1987, only children age two and older could effectively be vaccinated for protection from Hib disease. Now, a new vaccine using conjugate technology has been approved by the Food and Drug Administration for children as young as 18 months of age. With tests of the vaccine continuing on infants as young as two months it is hoped that mental retardation acquired by Hib disease will be totally preventable in the future.

Who is Most Susceptible to Hib?

It is estimated that there are some 20,000 - 30,000 cases of Hib disease annually, of which some 12,000 - 15,000 are bacterial meningitis (Peltola, H. *et al*, 1984). The Hib bacteria primarily attacks children under age five. Statistically, one in every 200 children will contract Hib disease within the first five years of life (Moxon, 1986).

The risk of contracting Hib disease is greatest in environments where several children are in close contact for extended periods. These environments include group living situations, households with more than one child less than age five, day-care centers and nurseries. Since Hib is present in respiratory secretions, it can be transmitted from one child to another by coughing, sneezing or through close facial contact.

For reasons that are not fully understood, Hib disease is especially prevalent among certain ethnic groups. The incidence of Hib among Alaskan Eskimos has been 10 times that of the general United States' population, while the incidence among American Indians is five times as great as that in the general population.

How Serious is Bacterial Meningitis?

Bacterial meningitis in the very young child is most commonly caused by Hib infection. It is nearly always fatal without treatment. Even with the use of modern antibiotics, three to five percent of meningitis victims die.

Of those who survive, 25-35 percent suffer permanent brain damage resulting in mental retardation, hearing loss, partial blindness, speech disorders, paralysis of one side of the body, behavioral problems or seizures.

How is Hib Treated?

Hib infections can be treated with antibiotics. However, there may be problems that remain after treatment. One reason for this is that many Hib diseases do not exhibit symptoms early, so that therapies often are begun too late. For instance, by the time severe symptoms signal parents that their child may have meningitis, brain cells may have already been permanently damaged or destroyed. Similarly, a Hib infection that results in epiglottitis often can block a child's windpipe within six to 12 hours (or even faster) after symptoms appear. Since antibiotics do not take effect immediately, emergency surgery often is required to save the child's life.

In addition, sometimes antibiotic therapy is ineffective because certain strains of Hib bacteria have become resistant and do not respond to the antibiotics, ampicillin and chloramphenicol, which are usually used to treat the illness.

How can Hib Disease be Prevented?

The primary strategy for preventing Hib disease is immunization. As discussed earlier, a new vaccine is now available for use in children as young as 18 months old. The new vaccine utilizes a vaccine technology called conjugate technology which stimulates an enhanced immune reaction, enabling the poorly developed immune systems of young children to respond to the vaccine.

Parents whose pediatricians had told them to wait for a Hib vaccine until their children reached 24 months, should contact their doctors again to have their 18-month-olds vaccinated with the new vaccine. Only a single injection is required to help provide protection against Hib disease.

If children are too young for the vaccine and have been exposed to Hib disease, a drug may be administered that will lessen the risk of contracting the disease. A physician should be consulted. (Centers for Disease Control, 1986).

How Many Children can Now be Protected from Hib Disease?

The new vaccine extends protection against Hib disease to nearly 50 percent more children than were previously protected. This is because children between two and five years of age account for about 25 percent of Hib cases annually, while children between 18 and 24 months alone

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account for more than 12 percent of Hib incidences.

Because most children (63 percent) who contract Hib disease are under 18 months old, a substantial number remain at risk. However, early results of field trials of the newly approved vaccine on infants show promise that it will be effective in immunizing them against the disease (Eskola, *et al*, 1987).

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